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United States Patent [19]

Newman et al.

[11] **Patent Number:** 5,987,633[45] **Date of Patent:** Nov. 16, 1999[54] **SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR TIME POINT VALIDATION**

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[52] U.S. Cl. **714/712; 379/15**

[58] Field of Search **371/20.1; 379/15, 379/112; 714/712**

[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

A system software solution for testing various network elements/entities and processes in a telecommunications network is provided. A network under test contains network entities which save data to a common database that is associated with processing particular test cases. A server correlates database data from the network under test and compares it to anticipated test case results. A disposition of the test cases is determined. Various elements of the invention interface appropriately, and process accordingly, to accomplish the testing and test result(s) disposition. In addition, the test system provides a means to verify billing records within the telecommunications network. Integrated into the system is logic that captures timepoints associated with critical events in a phone call from a test application perspective (particularly the events important to correct billing) and comparing those timepoints with actual results from the tested network. Timepoints are time information with milestones in the progress of call processing. Time information of applicable network elements is first assured to be synchronized, or translated for consistency. The test application timepoints are gathered, compared to billing records associated with the test case (e.g. call), and used to produce an accurate test case result.

14 Claims, 16 Drawing Sheets

